



The Minuteman



Volume 13 Number 3

The OFFICIAL NEWSLETTER of the
MINUTEMAN REPEATER ASSOCIATION

January 1985

MEMBERSHIP MEETING

<u>DATE</u>	Wednesday, January 16, 1985
<u>LOCATION</u>	Covenant Congregational Church, 315 Whitwell St., Quincy. Corner of Granite and Whitwell Streets. Limited parking avail- able behind the church. Talk-in on 146.67
<u>TIME</u>	7:30 PM, doors open at 7:00 PM for socializing.
<u>SPEAKER</u>	Panel discussion by some of our own tech- nical heavies on subject of (whatelse?) repeaters. Here's a chance to ask all those questions that you have been afraid to ask before.
<u>RAFFLE</u>	Raffle prize 2 meter 2-30 watt amplifier. Tickets available at meeting.
<u>REFRESHMENTS</u>	Free coffee and donuts.



1984-85 MEETING DATES

WEDNESDAY	-	JAN. 16	-	QUINCY
MONDAY	-	MAR. 18	-	---
TUESDAY	-	MAY 21	-	---

PRESIDENT'S CORNER

I hope you all had a happy holiday season, and wonder what New Year's resolutions you made.

One resolution Radio Amateurs need desperately is to do at least one thing to help HAM Radio. We are under serious attack (especially 220 MHz) by commercial radio interests and I am afraid that the pressure for our frequencies will continue. I will cite only one example; that of cellular mobile telephones. Who among us has not seen or heard the advertisements? One ad I saw in the Boston Globe cost more than the annual budget of the MMRA, and that is only the beginning. Can you imagine what will happen as equipment prices lower and every neighbor will be boasting up about the status symbol value of his or her cellular mobile phone. Once the sleeping giant of the public is awakened, look out!! One need only remember citizens band. Your resolution to help HAM Radio may be best employed in your awareness to write to the League or the FCC when you hear of attacks on any amateur band. Let's not be provincial and take solace that your favorite band is not under present attack; use your radios and let them hear us out there loudly and clearly.

We have geared the January meeting to you, our Membership. We noticed that there were many questions that you have concerning repeaters and their components, antennas and FM radios and that you would like your questions answered in everyday English and not in the parlance of engineers.

For that reason, the Board decided to have an informal panel composed of our technical group answer your questions.

When we convene we will have coffee and donuts and begin with the panel. We should learn a great deal about our hobby from this format and understand at least most of what is being said. The meeting at Quincy is in accord with an old MMRA tradition of conducting meetings in the various areas served by our repeaters.

There will be a meeting in January of technical people, a committee if you will, which will assist our Technical Chief in the final implementation of the Weston/Arlington link. This may give us a protocol to establish facilitating future linking.

We hope this will establish an MMRA Technical Committee which may be drawn upon from time to time by the Technical Chief. The advantage of such an organization has already proven its value when we constructed the KIBC type controllers in use in Weston and Marlboro. This not only gave us a budget boost but a controller made to our needs. We are doing everything we can think of to make the budget dollar go as far as possible, but we need your help. There are many of you who have not renewed and it is now January.

We do not have the money or manpower to chase after dues and, I wish that I did not have to burden you with my orations on this subject and I will say simply that we leave it to your conscience.

Our goals for the remainder of this fiscal year are to complete the linking, as I outlined, and to begin with establishing an auto patch for Stoneham.

The history of the MMRA has become quite interesting over our almost 15 years existence and I am enclosing a copy of the minutes of a June 1973 meeting. I felt you would enjoy this memorabilia and it is interesting to see the budget required almost 12 years ago and the per member cost. I believe there were less than 250 members then and three repeaters. Historically, the Boston repeater was moved to Quincy and on the air in January 1974 as 146.07/67.

continued on page 2

Please let us know if you enjoy some moments in past MMRA history to be published occasionally.

I'd like to welcome in the new calendar year with you at the January meeting with a hot coffee toast.

73, De KA1AL

MINUTEMAN REPEATER ASSOCIATION, INC.

MEETING OF DIRECTORS

MAY 3, 1973

At 8:00 p.m., a regular meeting of the Board of Directors of the MMRA was held at the home of K1YVB, duly called to order by W1PRI, President.

PRESENT: CCK, CQK, PRI, JDD, RAK, NPN, IRH, and YVB.
ABSENT: JDF, WSN, AND WPO.

In the absence of JDF, JDD recorded the minutes as temporary clerk.

The first order of business being the conduct of the forthcoming elections it was agreed by the board that no absentee ballots would be accepted after May 21. It was further established that no electioneering would be permitted after the membership meeting was formally convened. New members may join at the meeting and be permitted to vote until the President issues a final call beyond which the electorate will be frozen. The formal meeting will be convened at 8:30 p.m. and JDF will be in charge of the raffle.

The President then proposed that a preliminary budget be established for the forthcoming fiscal year in order to formulate a sensible recommendation with regard to dues. The President further noted that the problem is compounded by the fact that the Treasurer has not made 1973 financial information available to RGC, MMRA Auditor. On the basis of interim information the President recommended that the dues remain the same. YVB suggested that the dues level should be keyed to the objectives of the group and RAK proposed that the entire question be deferred until September after the election of new officers and directors.

CCK moved that the dues be lowered to \$10 per year, which motion was defeated. (YVB seconded and CCK and YVB voted in favor). RAK moved, seconded by IRH, that the dues be set at \$15 per year. Motion was defeated with only the proponents in favor. CQK moved that the dues be left at present level, seconded by IRH. M/S/P: That it be recommended that the dues remain at present level. (opposed - RAK, CCK)

RAK then presented a technical report on the three repeaters:
Weston - documentation completed
Boston - telephone control installed and fail-safe system in process, equipment to be converted from Motorola to Procline. Workbench constructed by ESP has been installed.
Marlborough - Procline backup system ready.

PRI noted that he has never seen financial figures for the past six months and CCK agreed to make them available without further delay.

WSN announced the following committees and appointments:

1. Technical Co-ordinator - RAK
2. Education Committee - VIB
3. Decals - UAQ
4. Programs - PRI declines and successor open
5. Activities Committee - JDF
6. Newsletter Editor - UAQ
7. Public Service Committee - CQK with instruction that all committee activities be coordinated with the Board of Directors.

WSN further indicated that regular Directors' meetings will be held two weeks prior to following membership meetings:
Monday, September 10, Tuesday November 13, Wednesday, January 9, Monday, March 2, and Tuesday May 2.

M/S/P: That a budget for fiscal year 1973-1974 in the total amount of \$6210 be and hereby is approved and adopted to be allocated as follows: (RAK and CCK opposed)

Public Service Committee - \$700, including the purchase of portable base unit for around \$400.
Vice President - \$150, membership meetings, \$150
activities committee, \$50 entertainment of guest speakers, \$150 as Membership Coordinator.
Secretary - \$750, including postage
Treasurer - \$200
Clerk - \$150
Newsletter - \$1800 (twelve issues)
Technical Committee - \$750
Education Committee - \$50
Weston rent - \$350
Telephone charges - \$600
NERA dues - \$210
Insurance and miscellaneous - \$150

WSN noted that this budget amounts to a cost of approximately \$24.70 per member and does not take into account potential tax liability.

M/S/P: That the Board recommend to the membership that dues remain as presently established (opposed CCK, RAK).

PRI reported that of the 50 Dycomm amplifiers, only 18 remain unsold, and then repeater is property of MMRA at no cost.

M/S/P: That the remaining 18 amplifiers be sold as an MMRA obligation relieving PRI of financial responsibility. (Unanimous)

There being no further business the meeting was adjourned at 11:00 p.m.

A true copy

ATTEST:

Martin E. Greenblatt
Martin E. Greenblatt, Clerk

EDITOR'S CORNER

Now that the holidays are behind us, it is time to get down to some serious hamming. Many of us will be hooking up those new Commodore computers to our rigs to work some RTTY. Some of us will continue to be content smashing the invaders from ZORK. Oh well, whatever turns you on!

Just a thought about the upcoming weeks. Prediction 1 - We will have snow during the commuting hours. Prediction 2 - There will be someone on our repeaters telling you that he also is getting snow - amazing! Let's all use a little common sense during critical travel periods. Leave a little air space for the emergencies that can crop up. Our repeaters are there for the using. However, talking for the sake of hearing your own voice may result in another ham not getting the message out. Prediction 3 - Half of you will applaud this article, half will be looking for the first snow flake.

Editor

COMING EVENTS

Sunday, 17 February, Algonquin Amateur Radio Club will hold a Flea Market at the Marlboro Jr. High School at Thresher Street, off Union Ave. or off Bolton Street (Rt. 85). The doors will open at 8:30 AM for sellers and 10:00 AM for buyers. The Flea Market runs until 2:00 PM. Advanced reserved tables are \$7.50. Tables sold at the door \$10.00. Admission is \$1.00. Make check payable to Algonquin Amateur Radio Club, Box 258, Marlboro, MA 01754. Food available, free parking, talk-in on 146.01/.61 and .52/.52 direct.

FLASH!! FLASH!! FLASH!! FLASH!!

19/79 ARA is sponsoring all level F.C.C. exams. They will be held Saturday March 16, 1985 at Ryan Hall in the Ireson Building at 493 Western Ave. (Route 107) Lynn, MA. from 10:00 AM to 1:00 PM (this is in the Lynn Hospital complex).

The pre-exam requirements for the general, advance, and extra applicants: Submit a 610 form plus a check, made payable to ARRL/VEC, for \$4.00. These are to be sent 30 days (2/13/85 - no walk-ins) prior to the exam to Ralph Gandolfo (KA1E) 18 Murdock Drive, Peabody, MA 01960.

The pre-exam requirements for the tech: The same as the higher class license but mailed to Bob Kalustian (W1DVR) 36 Columbia Road, Arlington, MA 02174.

The novice pre-exam requirements: There is no fee and we will accept walk-ins but prefer you mail a 610 form 30 days (2/13/85) prior to the exam to spread out our work load. If you do mail in your 610 it should be sent to Bob W1DVR, to the above address.

In the near future, we hope the restriction of no walk-ins for all but the novice will be changed, until it is we are bound by the stated procedures.

The 19/79 ARA gratefully acknowledges the help of Steve, W1DFL - Craig McGarvey, and the Lynn Hospital for their part in obtaining the use of the facilities.

The first bug to hit a clean windshield lands directly in front of your eyes.

A good carpenter is one who can keep a straight face while repairing a do-it-yourself project.

ANOTHER VISIT WITH THE ASYMMETRIC BAILEY DIPOLE

Chet Smith, K1CCL

Moses advised us to "be sure your sins will find you out." A couple or three years ago, George Downs, W1CT, published a story using some analysis I had provided him on the asymmetric version of the coaxial or Bailey dipole. The Minuteman Newsletter, evidently being short of more worthwhile material has reprinted George's tale of wonder. Hiding in the text is that if anyone wanted to concoct one of these things for other than the 2-M band to run me down. Tom Berran, N1BDC, has done this, and to make good on George's promise and satisfy Tom and everybody else once and for all I have worked up a chart using dimensionless parameters. Figure 1 is the Chart.

Dig out your November 1984 copy of "The Minuteman" for the definitions of D_1 , L_1 , D_2 and L_2 . The curve is based on Tai's formula for the dipole and covers the cases of most interest here. Be warned, however, that Tai's equation breaks down when the half-length of the dipole exceeds a quarter-wavelength. A couple of examples of how to use the chart:

Let $F = 440$ MHz, and $D_1 = 1/2$ inch. D_1 is the diameter of the upper part of the antenna. The wavelength is $= 68.18$ cm (26.843 in). From the chart the length L_1 of this portion must be 0.234λ or 15.955 cm (6-9/32 inches). The Radiation Resistance is 59.532 Ohms. For the asymmetric dipole to be resonant at 50 ohms the R_a of the lower portion should be $100 - 59.532 = 40.468$ Ohms or about 59.5 & 40.5 respectively. Project a line horizontally from 40.5 to the curve and drop down. The value of L_2 is about 0.207λ which is 14.114 cm (5.9/16 inches). Using your well-calibrated eye-ball the value of D_2 is 0.135λ or 9.204 cm (3-5/8 in.).

A similar exercise for 220 gives the following results:

$F = 222.5$ MHz ($\lambda = 133.33$ cm) $Z_{in} = 50 + j0$

$D_1 = 1/2$ inch (1.27 cm), $L_1 = 0.2364\lambda$ 31.52 cm (12 13/32 in)

$D_2 = 19.43$ cm (7 21/32 in) $L_2 = 0.2035\lambda$ 27.13 cm (10 11/16 in) (0.1457 λ)

de K1CCL

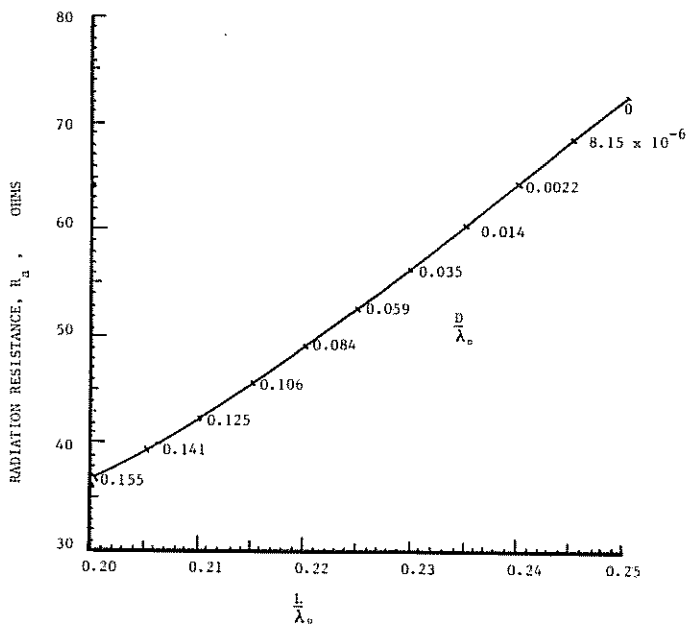


FIG. 1 CHART RELATING RADIATION RESISTANCE TO DIPOLE HALF-LENGTH AT RESONANCE WITH CORRESPONDING DIAMETERS

Wisdom is tolerated best when you afflict it upon people in small doses.

If a boy walks around a puddle, he is either ill or wearing old shoes.

MORE SCHOOL SCRIBBLINGS de KO1M

Most likely by the time this item appears in "The Minuteman" our latest amateur radio classes will be a fond and successful memory. Again, I pay tribute to all who have given of their interest, time, talent and dedication in bringing new hams into the fold - and hopefully into MMRA. We owe everyone participating in the education program an immeasurable vote of gratitude!! I hope they will continue in our efforts and others will find it feasible to join us as time and circumstances warrant. Our next series of classes will be in the fall of 1985 and will follow one of the yet to be decided formats:

- 1) Fall session (only): Four separate classes - Novice; Tech/General; Advanced; Extra.
- 2) Fall session: Novice & Tech/General and Spring session: Advanced & Extra.

In which direction we move will hinge on several variables including classroom space, teacher availability, etc. I will update you as time progresses.

Co-terminous with the above has been the introduction of the new 'volunteer examiner program,' mandated by F.C.C. and most capably administered by A.R.R.L. MMRA's initial foray into this arena was on 12/3/84. In addition to the amateur radio classes we are planning MMRA-sponsored FCC test sessions, at least twice annually and covering all license classes. By the way, the novice testing procedure has changed little, the only change being that both CW and theory written are given by the volunteer amateur (general or higher) at the same time. The written test is prepared by the volunteer. If you have any questions on this point please call me. Meanwhile, I would like very much to prepare a list of hams willing to assist in the volunteer examiner program. Although ARRL is only certifying advanced and extra class license holders - at least as of this time - there is a place for everyone in this program. We have a job for everyone who applies (gratis, of course) - so please let me know. I will handle the paperwork and you will tie up about four hours of your time once or twice a year in behalf of amateur radio. FCC is out of the testing business - we are in!!! Best 73 & 88.

WELCOME TO NEW MEMBERS

N1BPU	Royce	Marlboro
W4CBC	Douglas	Walpole
KA1CKG	Jonathan	Natick
KA6CPJ	James	Sudbury
N1CTA	Alton	Framingham
N1CWY	Bruce	Lexington
N1CYB	Rick	Shrewsbury
WB2DCL	Ralph	Westboro
N1DDZ	Robert	Newton
N1DEA	James	Lincoln
N2DTR	James	Westboro
A13E	Dwight	Stow
KA1EEC	Eric	Billerica
WA1EYK	George	Wentworth, NH
WA2FDG	Alan	Hudson
W1FDW	Donald	Townsend
KA1GFN	Kenneth	Fayville
W1GMM	Arthur	E. Hampstead, NH
KAIHOY	David	Dracut
K1JIY	Joel	Brockton
KAIKHK	Edward	E. Weymouth
KAILKM	Glenn	Cambridge
KAILLM	Antonio	Lexington
KB1MH	Michael	Hudson
W1QGL	William	Lexington
W1QMT	Jim	Arlington
WB8RUN	Klaes	Marlboro
WA1SNH	Peter	Billerica
N1SQH	Sue	Melrose
W1WNZ	John	Winchester
W1YUT	Albert	Pawtucket, RI

It's always easy to see both sides of an issue you are not particularly concerned about.

Don't knock the weather - without it nine-tenths of the people wouldn't start a conversation.

KALIYV 1547 8509 Joe
 KALIYY 1457 8509 Mary Jane
 KILJ 1336 8509 Irving
 WLJBY 1427 8509 Bernie
 WLJGI 1381 8509 Wally
 WLJDO 0847 8509 Frank
 KALJFP 1500 8509 Bob
 KLJHT 0878 8509 Dave
 KLJFI 1646 8510 Joel
 W38JLG 1534 8509 Avery
 KLJLK 0244 8509 Henry
 WALJNJ 1510 8509 Boz
 WLJOB 1071 8509 Harry
 NLJR 1207 8509 Jim
 WLJS 1161 8509 Joe
 WLJSM 1360 8509 Don
 WLJZD 0846 8502 Charles
 KMLK 1372 8509 Johnny
 WLKAN 0529 8509 Warren
 KALCKU 1655 8511 Ron
 KALKHK 1643 8510 Ed
 WLKIM 1659 8512 John
 WLKLY 1401 8509 Carlton
 KALKNP 1658 8512 Steve
 KIKOO 1594 8609 Charlie
 WLKPZ 1491 8509 Bill
 WLKSK 0700 8509 Bob
 KIKTW 0843 8501 Woody
 WALKYT 0267 8509 Al
 KILCQ 0380 8509 Joe
 KALLDV 1611 8506 Paul
 KALLDX 1581 8501 Tom
 WALLGP 1465 8509 Norm
 WLLHP 1428 8509 Joe
 WLLHV 0250 8509 Bill
 WB2LIT 0791 8501 Ray
 KILJN 0598 8507 Mike
 KALLKM 1634 8509 Glenn
 KALLLM 1633 8509 Antonio
 WLLMV 0717 8509 Dick
 KALLNR 1600 8509 Erich
 KALLQZ 1602 8509 Kati
 KALLRG 1604 8509 Brad
 KLLRX 1208 8509 Leo
 KBLLY 1244 8509 Joe
 WALLZI 0519 8503 Ron
 WLLZW 0492 8509 Bill
 KOLM 1327 8509 Frank
 KKLIM 1437 8509 Ken
 WLMA 0228 8509 Ed
 KLMBB 1484 8509 Dave
 KLMBX 1537 8509 Roger
 KLMBH 0807 8509 Glenn
 KALMDG 1656 8512 John
 WALMFG 1568 8411 Dan
 KALMGW 1657 8512 Bob
 KBLMH 1638 8509 Mike
 W3MHZ 1453 8509 Jim
 WLMLS 0989 8509 Curt
 WLMOJ 1299 8509 Charlie
 WALMOP 1596 8503 Perry
 KLMOQ 0815 8509 Frank
 WA2MVP 1620 8509 Harvey
 WLMWF 0864 8509 Joe
 WALMZO 0221 8509 Cindy
 KLNDP 0592 8509 Neal
 KBLNF 1354 8509 George
 KINLP 1572 8509 David
 KBLNO 1652 8511 John
 KLNON 0599 8509 Bob

WLNRO 1233 8509 Roger
 WLNWZ 1631 8509 John
 KNLO 1357 8509 Al
 WLOJF 0721 8509 John
 WALOJX 0146 8509 Rod
 WALOMW 1492 8501 Dick
 KALOP 1158 8509 Tony
 WALOQK 0115 8509 Jack
 KLOQX 0593 8509 Perry
 KALOS 1169 8509 Harold
 KLOYD 0345 8509 Dave
 KLOYE 1543 8509 Joe
 KLOZN 1380 8509 Fred
 KBLPA 1619 8609 Barry
 WLPBC 1584 8501 Gully
 KLPBL 1438 8509 Bob
 KLPD 1556 8509 Bud
 KLFFT 0147 8509 Reid
 WLPTX 0116 8509 Hal
 KLPK 1433 8509 Paul
 WALPNZ 1472 8509 Louis
 WLPRI 0102 8509 Bob
 KALPX 1408 8509 Fritz
 WALPZK 0234 8509 Helmut
 KRLQ 1371 8509 Sandy
 KBLQB 1621 8509 Rick
 WLQEC 1155 8509 Bill
 W2QFD 1474 8509 Anthony
 WLQGL 1649 8511 Bill
 WLQLC 0188 8509 Lee
 WALQMI 1588 8502 Gary
 WLQMT 1623 8509 Jim
 WALQNZ 1653 8511 Steve
 KLQNZ 1539 8509 Dick
 WLQUT 0614 8509 Nevin
 WLQXE 1097 8509 Bob
 WALQXI 0308 8509 Carol
 KULR 1531 8509 George
 WLRCJ 1284 8509 Woody
 WLREP 0199 8509 Bob
 WALRTY 0369 8509 Frank
 WDBRJJ 1589 8502 Mark
 KLRLY 0496 8509 Bob
 WLRNJ 1135 8509 Bob
 WALRNM 1573 8509 Carolanne
 W38RJN 1632 8509 Klaes
 WLRYE 0297 8509 Bill
 KDLS 1418 8509 Babe
 KILS 1605 8505 John
 AJLS 1443 8509 Milo
 KALSC 1617 8509 Kevin
 WALSCY 1579 8509 Bob
 WLSCS 0391 8509 Ruthe
 WLSEF 0746 8509 Bob
 WLSLH 1003 8509 Carl
 WLSM 0494 8509 Ed
 WALSMI 1333 8509 Bob
 WALSNH 1622 8509 Peter
 WLSQY 0518 8509 Walt
 KLSRS 1388 8509 Dick
 KLST 0555 8509 Steve
 KLSXS 0705 8509 Gordon
 KNGT 1389 8412 Jon
 KDLT 0839 8509 Rudy
 KKL T 1496 8502 Philip
 KNL T 1550 8509 Manny
 KLTCV 1053 8509 Roger
 WALTJJ 0591 8509 Nathan
 WALTRQ 0629 8509 Russ
 WLTYT 0845 8502 Doc

WB2TZV 1526 8509 Douglas
 KALU 1460 8509 Steve
 KVLU 1582 8501 Bob
 KLUAQ 0219 8509 Bill
 KLUCY 1241 8509 Allan
 WALUEH 1289 8509 Jim
 WLUF 0316 8509 Dennis
 KLUGM 1544 8509 Jim
 WALUGW 1034 8509 Jim
 WLUVN 1132 8509 Ed
 WLUVU 0582 8509 John
 WALUVR 0578 8509 John
 KTLV 0354 8509 Doc
 WALVAV 1587 8502 Bill
 WB6VFF 1128 8509 Michael
 W37VJK 1571 8411 John
 KVLVB 0303 8509 Mike
 KAGVNY 1597 8504 Jeffrey
 WALVOL 0670 8509 Larry
 WA2VST 1569 8509 Ira
 WALVSY 1126 8509 Rich
 WLVSYS 0155 8509 Bob
 KLVZI 1238 8509 Lee
 AJLW 0684 8509 Julie
 WLWAE 0830 8509 Bernie
 WALWDQ 0764 8509 Don
 KLWFPZ 0568 8506 Jack
 WB8WGY 1609 8506 Steve
 WALWHU 0550 8502 Marty
 WALWIG 0844 8509 Jay
 WLWJZ 0329 8509 Jim
 WLWME 0284 8509 Ralph
 WLWMZ 0506 8509 Joe
 WB7WOG 1616 8507 Neal
 WALWPI 1205 8509 Doris
 WLWRV 0865 8509 Ed
 WLWSN 0101 8509 Steve
 WB4WXT 1187 8509 Melissa
 WALWYC 0908 8509 Carl
 KALXK 1400 8509 Chris
 WLYHY 0302 8509 Lance
 WALYMW 1147 8509 Herbert
 WLYPC 1515 8509 Gerry
 WALYRQ 0899 8509 Charlie
 KLYSO 0527 8509 Jim
 WLYTK 1346 8509 Paul
 WALYTL 0741 8509 John
 WB4YTW 1185 8509 Jack
 WLYUT 1624 8509 Al
 K4YX 1186 8509 Pam
 KLYXS 0368 8509 Bea
 ABLZ 0969 8509 Jack
 ABLZ 1448 8509 Bernie
 KALZC 1368 8509 Yuki
 WLZEN 1613 8509 Onie
 WALZEP 1066 8509 Roger
 WLZFI 1122 8509 Bob
 WALZGK 1033 8509 Richard
 WALZID 1114 8509 Thomas
 WALZJG 1183 8509 Bob
 WALZJJ 0901 8504 Ray
 WLZLG 0440 8509 Jack
 WALZLK 0884 8509 John
 WLZML 0689 8509 Russell
 WLZOC 1093 8509 Arthur
 WALZRQ 0753 8509 Joey
 WALZSF 0763 8509 Jerry
 KLZUP 0295 8509 Hank
 KLZWQ 0338 8509 John



MINUTEMAN REPEATER ASSOCIATION, Inc.

BOX 2282
LEXINGTON MASS. 02173

(A Non-Profit Communications Organization Serving the Public in Time of Emergency)

APPLICATION FOR MEMBERSHIP

I, _____, hereby apply for:
[please print]

INDIVIDUAL MEMBERSHIP _____ Dues: \$20. PER YEAR

FAMILY MEMBERSHIP _____ Dues: \$30. PER YEAR
(list other family names and calls below)

in the MINUTEMAN REPEATER ASSOCIATION, INC.

I agree to abide by the rules and regulations of the Association as stated in its By-Laws, and understand that acceptance of this application entitles me to all rights and privileges of membership as provided for by the By-Laws.

Signature _____ Date _____

PLEASE PRINT OR TYPE:

NAME _____

CALL _____ CLASS OF AMATEUR LICENSE _____

NAME USED ON THE AIR _____

HOME ADDRESS _____
Street City and State Zip code

HOME TELEPHONE _____

WORK TELEPHONE _____

OCCUPATION _____ EMPLOYER _____

MEMBER OF: ARRL? _____ OTHER REPEATER ASS'N? (NAME) _____

DO YOU HAVE TOUCHTONE? YES () NO ()

HOW MANY 2-METER RIGS? BASE _____ MOBILE _____ PORTABLE _____

I CAN, AND AM WILLING TO, ASSIST THE ASSOCIATION AND/OR MAINTAIN THE REPEATERS IN THE FOLLOWING WAYS:

ANTENNA _____

RECEIVER _____

TRANSMITTER _____

LOGIC _____

TELEPHONE _____

BUILDING CONSTRUCTION _____

EQUIPMENT CONSTRUCTION _____

EQUIPMENT TRANSPORTATION _____

TECHNICAL DOCUMENTATION _____

SCHEMATIC DRAWINGS _____

TECHNICAL LIBRARY _____

TEACHING: CW _____ THEORY _____

ANNUAL AUCTION _____

PUBLICITY _____

NEWSLETTER PUBLICATION _____

PUBLIC SERVICE _____

LEGAL AID _____

MEDICAL AID _____

MEETING SET-UP _____

SOCIAL FUNCTION SET-UP _____

REFRESHMENTS _____

COMPUTER PROGRAMMING _____

OTHER _____

MINUTEMAN REPEATERS:

146.01/.61 146.07/.67 146.115/.715 146.22/.82 222.80/224.40
444.925-449.925

REFERRED TO MMRA BY _____

Telephone 617/486-3400, 3040
675 Great Rd., (Rte. 119) Littleton, MA 01460
1 1/2 miles from Rte. 495 (Exit 31) toward Groton, Mass.

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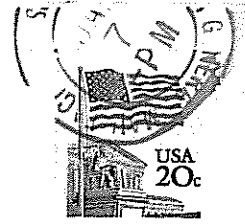


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MAIL ORDER
PURCHASES
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MASTER CARDS
Accepted



MMRA

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FIRST CLASS MAIL

